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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,469	01/22/2004	Colby J. House	110348-133033	6667

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EXAMINER

SHAKERI, HADI

ART UNIT PAPER NUMBER

3723

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/763,469

Applicant(s)

HOUSE ET AL.

Examiner

Hadi Shakeri

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

**DETAILED ACTION*****Claim Rejections - 35 USC § 102***

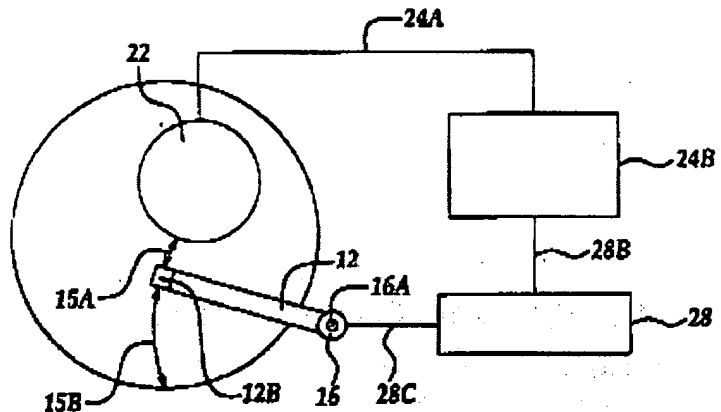
1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 4-7, 14, 15 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Lin et al. (6,821,895).

Lin et al. discloses all of the limitations of claims 1, 8 and 14, i.e., a slurry arm (12) "adapted" to pivot over a pivoting axis (16A) having two or more nozzles (12B) (04:18); a control (28) coupled to the arm and "adapted" to control the arm, the control system also in communication with a wafer holder (22), (28B, 24B, 24A) and coordinating engagement with the pad in view of the holder.



Regarding claims 4 and 5, Lin et al. meets the limitations, ports "adaptable to provide different slurries of different compositions.

Regarding claims 6, 7 and 13, Lin et al. meets the limitations, e.g., one port "adapted" to deliver slurry at a flow rate; the arm controllable to position slurry at a target area; controlling (positioning) the nozzle to deposit slurry at a flow rate.

Regarding claim 18, Lin et al. is considered to meet the limitations.

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**Claim Rejections - 35 USC § 103**

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

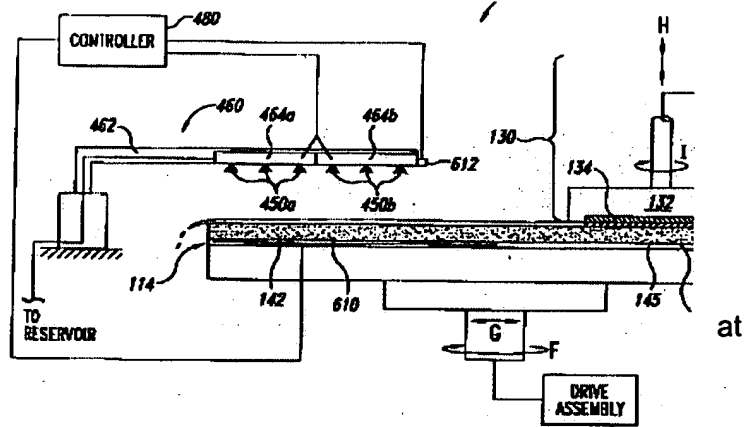
4. Claim 3 is rejected under 35 U.S.C. 103(a) as obvious over Lin et al.

Lin et al. meets all of the limitations of claim 3, except for disclosing positioning the arm along an arc spanning from one perimeter edge to another perimeter edge. The arrangement disclosed by Lin et al. is for a preferred embodiment, and modifying the invention to move the arm from one edge to another would be obvious to one of ordinary skill in the art, depending on the workpiece and/or operational parameter to achieve optimal removal rate.

5. Claims 8, 16 and 17 are rejected under 35 U.S.C. 103(a) as obvious over Lin et al. in view of Joslyn.

Lin et al. meets all of the limitations of the above claims, except for disclosing controlling different ports of the nozzle to provide one or more slurry solutions one or more flow rates. Joslyn

teaches improving polishing rate by providing slurry at different location of the pad by a slurry arm having several ports, wherein a controller adjust the flows per sensed parameters. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to

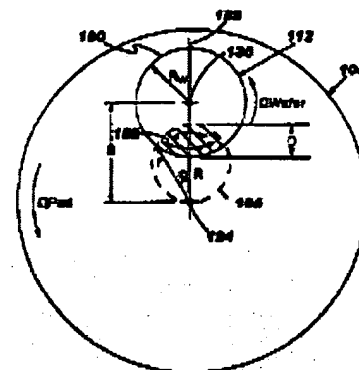


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modify the invention of Lin et al. with the method and means as taught by Joslyn to improve polishing uniformity.

6. Claims 9-13 are rejected under 35 U.S.C. 103(a) as obvious over Lin et al. and Joslyn as applied to claim 8 above, further in view of Crkvenac et al. (6,843,709)

Lin et al. and modified by Joslyn is considered to meet all of the limitations of claim 9, including adjusting the rotation of the arm, as indicated in the previous Office Action, however, in the alternative, Crkvenac et al. is cited. Crkvenac et al. teaches controlling the removal rate uniformity by controlling various aspect of polishing, e.g., by speed selectors for one of both of the rotational rates of wafer and polishing pad, varying the rate and location of delivery of slurry to the polishing pad, (04:20-37). It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to further modify the invention of Lin et al. and Joslyn with the method and means as taught by Crkvenac et al. to achieve polishing removal rate uniformity.



Regarding claims 10-13, Lin et al. as modified by Crkvenac et al. meets the limitations, i.e., positioning (adjusting the rotation) of the slurry arm with respect to rotational speed of the polishing pad and/or position of wafer holder.

### Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Response to Arguments***

8. Applicant's arguments filed 04/20/05 have been fully considered but they are not persuasive. The argument that Lin et al. fails to teach or suggest two or more slurry ports is not persuasive. Lin et al. in column 4, lines 16-18 discloses that the slurry arm may include more than one slurry dispensing opening in addition to providing separate cleaning/rinsing supply tubes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hadi Shakeri whose telephone number is 571-272-4495. The examiner can normally be reached on Monday-Thursday.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Hadi Shakeri  
Primary Examiner  
Art Unit 3723  
August 4, 2005